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VIA E-MAIL AND U.S. MAIL

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Re: Omega Chemical Corporation Superfund Site
Proposed Plan for OU-2 Groundwater Contamination

Dear Ms. Deschambault:

Phibro-Tech, Inc. (PTI), which operates a hazardous waste treatment facility in Santa Fe Springs, California, downgradient of the Omega facility (the "PTI Site" or the "Site"), respectfully submits the following comments regarding the Proposed Plan for OU-2 Groundwater Contamination at the Omega Chemical Corporation Superfund Site (Proposed Plan).

I. Introduction

We have carefully reviewed the Proposed Plan and the documents on which it is based, the Remedial Investigation (RI) and Feasibility Study (FS). The RI concludes that the PTI Site is a significant source of volatile organic chemicals (VOCs) and hexavalent chromium (Cr6) in the OU-2 groundwater. The Proposed Plan is based, in part, on EPA's belief that there is a significant "spike" of VOCs and Cr6 emanating from the PTI Site.

Unfortunately, the data and analyses contained in the RI with regard to groundwater conditions at or near the PTI Site are significantly flawed.

First, EPA's conclusions regarding VOCs at the PTI Site are based on a piecemeal review of the available data, rather than a comprehensive analysis. A comprehensive analysis of all the data – including the changes in upgradient and downgradient concentrations over time – reveals that VOCs are migrating through the PTI Site, not originating from it.

Second, the data regarding VOCs is incomplete. In April 2010, PTI installed six new monitoring wells upgradient of the Site. The data from these new wells support the conclusion that VOC

contaminants are passing through the PTI Site, not originating from it. This information is discussed below in Section II.C. and in the Attachments, CD #1.

Third, based on the historical operations of the PTI Site, there is no basis for concluding that organics could have been present at significant concentrations. There are no records indicating that organics were accepted or treated. Nor is there any evidence that any of the treatment equipment at the facility could have handled organic materials, which are incompatible with the inorganic material that has been treated at the Site.

Fourth, the PTI S has long been subject to regular, routine inspections by EPA and the California Department of Toxic Substances Control (DTSC). None of these inspections have revealed the presence of organics at the Site.

Fifth, with regard to Cr6, the two primary monitoring wells relied on by EPA in its analysis have been determined to be faulty, and PTI has been asked by DTSC to prepare a work plan for their abandonment and removal. The data from these faulty wells has severely skewed EPA's understanding of the distribution of Cr6 near the PTI Site.

Sixth, the PTI Site is downgradient from Omega OU-1, which is responsible, along with other upgradient sites, for the impacted groundwater.

When all of the above is taken into consideration, it becomes clear that the PTI facility is not a contributor to the Omega plume.

II. PTI is not a contributor of VOCs.

A. The RI states that PTI is a source of VOCs in OU-2.

The RI names the PTI facility as a major source of TCE, and a source or possible source of 1,4-dioxane; chloroform; carbon tetrachloride; 1,1-DCA; and BTEX. (RI §§ 5.7.2, 5.7.4, 5.7.10 & 5.7.11.) It notes that the following additional substances have been detected at the Site: 1,2-DCA; 1,1-DCE; cis-1,2-DCE; methylene chloride; 1,1,1-TCA; chlorobenzene; and Freon 11. (RI § 5.5.1.2.)

The RI states that TCE "appears to be the primary VOC of concern" at the Site. (RI § 5.5.1.2.) In the map entitled "Composite TCE Distribution," there is a 100 µg/L contour line surrounding the PTI Site. (RI Figure 5-12.)

B. A comprehensive look at the data demonstrates that PTI is not a source of VOCs in OU-2.

EPA's conclusions regarding PTI being a source of VOCs are based on a piecemeal review of data. EPA's analysis uses data from different time periods, and does not take into consideration

whether the cited monitoring wells are upgradient, downgradient, or cross-gradient of the Site. (RI §§ 5.7.2, 5.7.4, 5.7.10 & 5.7.11.) The RI is incorrect. PTI is not a source.

A comprehensive review of the data shows that PTI is not a source of VOCs in OU-2. PTI has not historically used, received, or processed VOCs at the PTI Site. While VOCs have been detected over time in wells at the Site, the pattern of VOC detections has shown no single area with consistently high detections of VOCs in groundwater, which would indicate a historical release of a chemical at the detected location. Instead, VOCs have been found in individual wells with levels that rise and fall over the years in waves of concentration. Generally, VOC concentrations at the Site's downgradient wells—which detect groundwater leaving the Site—are lower than concentrations at upgradient and cross-gradient wells—which detect groundwater coming onto the Site. This pattern of VOC detections demonstrates that the chemicals are migrating onto and through the Site from offsite sources. (*Phibro-Tech, Inc. Final Site Conceptual Model*, CDM, March 9, 2005 (*Conceptual Model*), Attachments, CD #2.)

Moreover, there is little to no correlation between VOCs in overlaying vadose zone soil layers and the conditions of the underlying groundwater. Soil and soil vapor data used to design the active soil vapor extraction remediation system target the center of the Site. Regardless of origin, there are no elevated detections of VOCs beneath this area of the Site. (*Phibro-Tech, Inc. Revised, Comprehensive Soil Vapor Survey Report And SVE Pilot Test Work Plan*, Iris Environmental, August 24, 2006.) Instead, the elevated VOC detections in upgradient, background groundwater well MW-11 (cited in RI Figure 5-12), cross-gradient well MW-03, and background well pair MW-01S&D shows that the PTI Site is being impacted by the Omega OU-2 plume, the Pilot Chemical plume, or other upgradient sources, and that a downgradient VOC groundwater plume is not originating from the PTI Site. (*Phibro-Tech, Inc. July 2010 Quarterly Sampling Report*, Iris Environmental, November 1, 2010 (*Quarterly Report*), Attachments, CD #1.)

In addition, for over 20 years the PTI Site has been the subject of inspections by EPA and DTSC. None of those inspections identified evidence that organics were used or stored at the Site as a result of PTI's operations. Finally, given PTI's long-history of inorganic chemical production and inorganic waste treatment, the likelihood of the facility actually using organics in concentrations sufficient to impact groundwater is virtually non-existent. The facility's inorganic waste treatment equipment cannot handle organic material, which is incompatible with inorganic material and would pose the risk of fires or explosions if it were commingled.

1. PCE

The Human Health Risk Assessment conducted in the RI concludes that tetrachloroethene (PCE) is responsible for 98% of the cancer risk posed by the Omega plume. (Proposed Plan at 5; RI § 7.4.) However, based on the pattern of PCE detections in all wells at PTI over the past 20 years, there is no source for PCE at PTI. Isolated peaks of PCE detected in upgradient, background wells MW-1S&D match isolated peaks of PCE detections in cross- and downgradient wells, which shows that PCE is migrating to the PTI Site from an upgradient,

offsite source. Therefore, it is incorrect to list PTI as contributing PCE to the OU2 plume. (*Conceptual Model*, Attachments, CD #1; *Quarterly Report*, Attachments, CD #2.)

2. TCE

Trichloroethene (TCE) detections in upgradient (MW-11, MW-1S&D) and cross gradient (MW-3, MW-6B&D) PTI wells have demonstrated a consistent flux of this chemical onto and across the PTI property from upgradient sources. However, there is no evidence in the 20 plus years of monitoring at PTI to support the conclusion that TCE is migrating offsite from PTI at concentrations at or above the regional background as documented in the draft Omega RI. Additionally, the available data do not indicate a correlation between soil gas concentrations detected in the vadose zone and TCE concentrations detected in the groundwater, which is further evidence that the source(s) of TCE are upgradient of the PTI Site. Based on the above, it is clear that PTI is not a source of TCE to the OU2 plume and should not be listed as a source of TCE to the OU2 plume.

3. 1,4-dioxane

RI investigators did not review the full range of available reports for PTI. As a result, they asserted that PTI does not test groundwater for 1,4-dioxane. However, this analyte is part of the Appendix IX suite of analytes that PTI analyzes on an annual basis. 1,4-dioxane results are presented in the Annual Summary appended to all fourth quarter groundwater monitoring reports (including the October 2006 report cited in the DRAFT RI), and are thus readily available for review. The highest detection of 1,4-dioxane in a Phibro-Tech well was in the background well MW-01S at 140 µg/L, whereas the highest concentration in a downgradient well was 22 µg/L in MW-7. As a result, the best available evidence does not indicate a 1,4-dioxane source at the PTI Site. (*Conceptual Model*, Attachments, CD #1; *Quarterly Report*, Attachments, CD #2.)

4. Chloroform

In over 20-plus years of groundwater monitoring, chloroform has been detected only twice at the PTI Site at concentrations above the Maximum Contaminant Level of 80 µg/l. These detections were located in an area influenced significantly by groundwater migrating from offsite sources. Based on the scarcity and location of the detected concentrations, the data shows that PTI is not a source of chloroform to the Omega OU-2 plume. (*Conceptual Model*, Attachments, CD #1; *Quarterly Report*, Attachments, CD #2.)

5. Carbon tetrachloride

Among the downgradient wells at the PTI Site, carbon tetrachloride has only been detected consistently above the MCL in MW-3. Due to its location on the northwestern edge of the Site, cross-gradient from the center of the Site, MW-3 more closely monitors groundwater emanating from offsite. In light of the lack of detections of carbon tetrachloride anywhere else on the Site,

the carbon tetrachloride detections in MW-3 are the result of impacts originating from upgradient sources such as Pilot Chemical. (*Conceptual Model*, Attachments, CD #1; *Quarterly Report*, Attachments, CD #2.)

6. 1,1-DCA and 1,2-DCA

1,1-DCA and 1,2-DCA are breakdown products of the parent chemical TCA. While groundwater data from downgradient PTI wells do indicate that 1,1-DCA and 1,2-DCA have been detected above the MCL of 5 µg/L, the lack of TCA detections historically shows that no source for 1,1-DCA or 1,2-DCA existed at the PTI Site. Upgradient TCA and DCA sources were documented in the Draft RI. Any 1,1-DCA or 1,2-DCA detected at the Site is migrating onto the PTI Site from those sites. (*Conceptual Model*, Attachments, CD #1; *Quarterly Report*, Attachments, CD #2.)

7. BTEX

Former fuel USTs were removed from the PTI Site decades ago. The current SVE system is remediating residue TPH and BTEX compounds from the vadose zone. However, BTEX is rarely detected in well MW-8, located adjacent to the former UST location. TEX is detected in wells MW-3, MW-10, and MW-11, the three wells closest to the former Pilot Chemical site, a documented TEX release site. Since 1994, detections of benzene have only exceeded the MCL of 1 µg/L in downgradient PTI wells MW-3 and MW-15D. These benzene detections are generally very low; maximum detections are 2.5 µg/L in MW-3 and 2.3 µg/L in MW-15D. Detections of toluene have not exceeded the MCL in downgradient wells since at least 1995, and have only exceeded the MCL a total of three times among all downgradient wells. Since July 1999, ethylbenzene and xylene concentrations in downgradient wells have only exceeded the respective MCLs of 40 µg/L and 20 µg/L in MW-3. MW-3 has been non-detect for ethylbenzene and xylenes since July 2008. These concentrations demonstrate that BTEX constituents are originating at the upgradient Pilot Chemical site but not completely migrating across the PTI Site. (*Conceptual Model*, Attachments, CD #1; *Quarterly Report*, Attachments, CD #2.)

8. 1,1-DCE and cis-1,2-DCE

1,1-dichloroethene (1,1-DCE) and cis-1,2-dichloroethene (cis-1,2-DCE) are breakdown daughter products of PCE and TCE, and PTI is not adding these chemicals to the Omega OU2 plume for the same reasons that PTI is not adding PCE or TCE—the chemicals are migrating onto the Site from upgradient sources and migrating offsite at or below the same levels. PTI is not a source of 1,1-DCE or cis-1,2-DCE. (*Conceptual Model*; *Quarterly Report*, Attachments, CD #1 and #2.)

9. Methylene chloride

Methylene chloride has never been identified as a chemical of concern at PTI. Methylene chloride is, however, a common laboratory contaminant, and the few occasions when methylene

chloride was detected above the Maximum Contaminant Level of 5 µg/l in PTI wells was in the 1990s when its use in the offsite laboratories testing groundwater samples was more prevalent than today. Given that no elevated concentrations have been detected for many years and there is no evidence of migration offsite, PTI is not a source of methylene chloride to the Omega OU-2 plume. (*Conceptual Model*, Attachments, CD #1; *Quarterly Report*, Attachments, CD #2.)

10. 1,1,1-TCA

It is unreasonable to conclude that Phibro-Tech could be responsible for 1,1,1-TCA detections at Site C, when this chemical is rarely detected in Phibro-Tech wells, and when detected it is at concentrations consistent with or lower than the regional plume. As stated in the RI, 1,1,1-TCA concentrations are higher at Site B, adjacent to Phibro-Tech, and at Site C. (RI § 5.7.11.5.)

Chemical detections in Omega well MW17A are more likely related to releases from the former Angeles Chemical and McKesson Chemical sites than the Phibro-Tech Site as was stated in the RI, since groundwater flow is more direct between the former sites and MW17A. It is thus unlikely that any 1,1,1-TCA detections in MW17A came from Phibro-Tech, especially since McKesson wells contain 1,1,1-TCA at concentrations up to 670,000 µg/L. (*Conceptual Model*, Attachments, CD #1; *Quarterly Report*, Attachments, CD #2.)

11. Chlorobenzene

The draft RI notes Chlorobenzene was detected in Phibro-Tech wells and presumably is attempting to imply that Phibro-Tech is a source for Chlorobenzene. It is entirely unreasonable to conclude that Phibro-Tech is a source for Chlorobenzene (or more specifically 1,2-Dichlorobenzene (1,2-DCB), 1,3-DCB, 1,4-DCB, 1,2,3-Trichlorobenzene (1,2,3-TCB), and 1,2,4-TCB. In over 20 years of groundwater monitoring, DCB has been detected at the Phibro-Tech Site only once at a concentration slightly above the MCL of 5 µg/L and TCB has never been detected at the Phibro-Tech site above the MCL, if at all. (*Quarterly Report*, Attachments, CD #1.)

12. Freon 11

There is no evidence to suggest that PTI is a source of Freon 11 detected in the Omega plume. Freon 11 (Trichlorofluoromethane) has only occasionally been detected at the Phibro-Tech Site. When detected, it is most commonly in the deeper background well MW-01D. All detections throughout the monitoring history have been below the MCL. This indicates that the occasional low-level detection of Freon 11 is attributable to the Freon 11 detected in the regional plume.

C. Data from new upgradient wells confirms that PTI is not a source of VOCs in OU-2

In April 2010, Iris Environmental installed six upgradient groundwater monitoring wells (i.e., three well pairs) in the Hollydale Aquifer at the PTI facility. These wells were installed to

provide additional data on the quality of groundwater migrating onto the PTI facility by providing additional data from locations further upgradient to the Site. (*Phibro-Tech, Inc. Groundwater Monitoring Well Installation Report*, Iris Environmental, August 27, 2010 (*Installation Report*), Attachments, CD #1.)

Well installation activities were conducted from April 19 through 23, 2010. One of the well pairs was installed on the Site (MW-21S and MW-21D); the two remaining well pairs were installed in the Dice Road right-of-way immediately northeast of the Site (MW-22S and MW-22D, and MW-23S and MW-23D).

Chemical detections in groundwater samples from the new background wells confirm that off-site sources of impacts to groundwater exist for VOCs, hexavalent chromium, and total chromium. Highest concentrations of target chemicals were generally detected in off-site well MW-23D, which is located directly upgradient to onsite wells MW-01S and MW-01D. (*Installation Report*, Attachments, CD #1; *Quarterly Report*, Attachments, CD #1.)

III. PTI is not a contributor of hexavalent chromium.

A. The RI states that PTI is a major source of hexavalent chromium in OU-2/

The RI identifies the PTI facility as a major source of Cr6. (RI § 5.7.6.) In the RI map of “Composite Hexavalent Chromium Distribution,” a large plume of Cr6 is drawn emanating from the PTI facility. (RI Figure 5-17.)

B. When the data from two faulty wells is excluded, it becomes clear that PTI is not a source of hexavalent chromium in OU-2.

Historically, there have been detections of high levels of hexavalent chromium in the groundwater at the PTI facility. However, recent and improved monitoring has shown that the historical groundwater detections of hexavalent chromium were inaccurate.

The historical detections of hexavalent chromium in the groundwater are now known to be the result of the manner in which the monitoring wells were constructed. A number of wells were biased to display high concentrations of hexavalent chromium in the groundwater because they were cross-screened across the aquitard. When the water table was high enough to meet the aquitard, the cross screening of the wells resulted in groundwater rising up into the filter pack of each well and mixing with the soluble contaminants in the aquitard. This mixing created a hexavalent chromium solution, and it was that solution that was being detected at the wells. Thus, the high levels of hexavalent chromium detected historically were a function of well construction (cross-screened wells) that actually reflected the chemicals in the aquitard, not the groundwater aquifer.

The inaccurate results stemming from the cross-screened wells were discovered when the water table dropped in recent years, and the groundwater was not rising up inappropriately into the

filter pack of certain wells. The levels of hexavalent chromium detected in the groundwater samples quickly dropped to zero. DTSC has accepted that the wells were poorly constructed and producing inaccurate detections, and has requested a work plan for the abandonment and replacement of the wells. (Letter from Iris Environmental to K. San Miguel, DTSC, March 23, 2010, Attachments, CD #1; conversation with S. McArdle, DTSC, October 19, 2010.)

In order to determine whether hexavalent chromium is impacting the groundwater, the data from the cross-screened wells was eliminated so that accurate comparisons of up and downgradient water quality could be made. Since about 2007, hexavalent chromium has been detected in up and cross-gradient background wells at levels that match those in the downgradient wells with hexavalent chromium detections. This shows that hexavalent chromium is not migrating offsite at concentrations above background conditions and that PTI is not a source of hexavalent chromium to the Omega OU-2 plume. (*Conceptual Model*, Attachments, CD #1; *Quarterly Report*, Attachments, CD #2.)

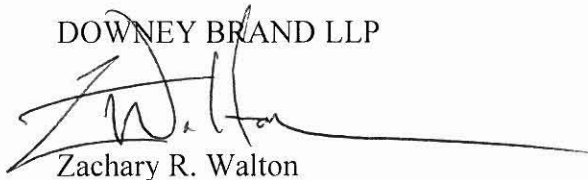
IV. Conclusion

The Proposed Plan is based on a Remedial Investigation that contains significantly flawed data and analysis regarding the condition of groundwater at or near the PTI Site. As demonstrated above, the PTI Site is not a contributor to the Omega plume. EPA should modify the RI and Proposed Plan to reflect the new data and analysis provided by these comments.

PTI would welcome the opportunity to discuss these issues in more detail with EPA staff.

Very truly yours,

DOWNEY BRAND LLP



Zachary R. Walton

cc: Stephen Berninger, EPA

Attachments

Compact Disk #1

Phibro-Tech, Inc. Revised, Comprehensive Soil Vapor Survey Report End SVE Pilot Test Work Plan, Iris Environmental, August 24, 2006.

Phibro-Tech, Inc. July 2010 Quarterly Sampling Report, Iris Environmental, November 1, 2010.

Phibro-Tech, Inc. Groundwater Monitoring Well Installation Report, Iris Environmental, August 27, 2010.

Letter from Iris Environmental to K. San Miguel, DTSC, March 23, 2010.

Compact Disk #2

Phibro-Tech, Inc. Final Site Conceptual Model, CDM, March 9, 2005.